Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of	)	
	)	
Interference Immunity Performance Specifications for Radio Receivers	)	ET Docket No. 03-65
	)	
	)	
Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television	)	MM Docket No. 00-39
	)	

To: The Commission

REPLY COMMENTS

Metrocall Holdings, Inc., Arch Wireless Operating Company, LLC, Weblink Wireless I, L.P., the Allied National Paging Association and the American Association of Paging Carriers (collectively, "Joint Commenters") hereby submit their Reply Comments in the above-referenced proceedings.

I. Receiver Performance Specifications are Unnecessary and Inappropriate for CMRS.

Commenters that address the issue of whether the Commission should apply its proposed receiver standards to Commercial Mobile Radio Services ("CMRS") agree that receiver interference immunity standards are unnecessary for the CMRS industry. Further, commenters noted, mandating such standards for CMRS would likely lead to higher prices for customer equipment, less innovation, and, ultimately, less reliable service. Such standards would also isolate the U.S. CMRS industry from the international marketplace, reducing the "economy of scale" benefits of the U.S. market

and diminishing U.S. consumer choice.[1] It is an uncontroverted fact that the competitive CMRS marketplace is consistently producing increasingly reliable, efficient and selective receivers that are capable of rendering innovative functions and services and that are provided at attractive costs to customers. In fact, Nokia states,

> The current experience of commercial mobile services should serve as a model for the effective development of standards…For commercial mobile services, pressure from the markets provides a financial incentive for those spectrum users to utilize their spectrum as efficiently as possible.[2]

The success of CMRS equipment manufacturers to produce, and CMRS carriers to operate, spectrally efficient receivers is nowhere more apparent than in the messaging industry. In its comments, IEEE correctly notes that narrowband wireless receivers already typically have higher interference immunity than wideband receivers.[3]

There is no indication that regulation can improve on the technical and operational efficiencies achieved by this competitive industry sector. And, the voluntary and cooperative approach taken by the CMRS industry, to be as flexible and innovative as the marketplace demands, is certain to continue producing spectrally efficient equipment which is then used to provide innovative and affordable services to consumers.. To restrict the industry with inflexible and unnecessary performance mandates for receiver standards would stifle the very accomplishments the proposed

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1 *See* Comments of Cellular Telecommunications and Internet Association at 2 ("CTIA Comments"); Comments of Nokia Inc. at 2, 4-5 ("Nokia Comments"); Comments of Motorola, Inc. at 9 ("Motorola Comments"); Comments of Nortel Networks at 3 ("Nortel Comments"); Comments of Ericsson Inc. at 5, 8-9 ("Ericsson Comments"); Comments of AT&T Wireless Services, Inc. ("AT&T Comments") at 3-7, 13 and Comments of Bellsouth Corporation and Cingular Wireless LLC at 16-18 ("Cingular Comments").

2 *See* Comments of Nokia at 5.

3 *See* Comments of IEEE at 4, ¶ 6.

regulations are supposed to produce – spectrally efficient, non-interfering RF operations. As AT&T points out, technological advancement within the industry is too rapid for the Commission to play a "meaningful role."[4] Any receiver specifications the Commission may adopt will always be one step behind the then-current interference environment.[5] Finally, it is clear that the *NOI* has not seriously considered what changes would be needed to other components of a wireless network to accommodate new receiver specifications that do not evolve through industry experience and voluntary standards, but are imposed by regulatory fiat. These additional changes would also impose costs on carriers that would ultimately be borne by customers, either in the form of higher prices for services and equipment or in the diversion of carrier resources from development of other network improvements and innovative service offerings.

Thus, for the reasons stated in the Joint Commenters' Comments, and in the comments of other CMRS carriers and equipment manufacturers, the Commission should not impose any receiver interference immunity specifications on the CMRS industry generally, or on the messaging industry in particular.

II. Proposed Receiver Specifications Should Not be Applied to Messaging Transmitters.

Several commenters aptly observe that receiver performance is not merely a question of the particular specifications of customer equipment but rather is a function of, and only one factor in, overall RF system design.[6] Commenters also agree that

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4 *See* Comments of AT&T at 11.

5 *See* Nokia Comments at 3; Ericsson Comments at 6.

6 *See, e.g.*, Cingular Comments at 19-21; Nokia Comments at 2; Comments of the Wi-Fi Alliance at 3; Motorola Comments at 2.

network design is a complex matter.[7] Numerous trade-offs are made to create networks that are spectrally efficient and capable of providing reliable services with low incidences of dropped or degraded transmissions, while not adding so much to the network's capital requirements that services are priced beyond what consumers are willing to bear. The Joint Commenters wholeheartedly agree with these observations.

The transmitters, receivers and other network components in wireless networks are highly interrelated, even more so in a messaging network. It is stating the obvious to observe that in two-way networks, the customer's receiver has transmission capabilities. But wireless base stations also act as receiving stations; even in one-way networks, the base stations receive signals from control stations. Transmitting stations are of course already subject to extensive rules governing their technical characteristics and operation. Although the *NOI* purports only to regulate end-users' receivers, the actual parameters of the Commission's proposed receiver regulations are far from clear.

The Joint Commenters would oppose any additional regulation of wireless industry transmission equipment as unnecessary, burdensome, and sure to raise the costs of service to the public.

III. Receiver Specifications Should Not be Used as an Indirect Way of Implementing a New Spectrum Management Paradigm Premised on Interference Temperature.

Commenters particularly object to using receiver specifications and interference temperature techniques to increase crowding on already-congested, fully-utilized spectrum bands, such as those used by the CMRS industry.[8] Only seven percent of

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[7] *See, e.g.*, Ericsson Comments at 7-8; Cingular Comments at 21.

[8] *See, e.g.*, CTIA Comments at 3; Cingular Comments at 11-14.

spectrum allocations lie in the spectrum bands above 3 GHz, which means that 93% of the allocations are between 0 to 3 GHz.[9] Because each additional user in encumbered CMRS bands will automatically increase the noise floor, it seems unnecessary and counter-productive to try to squeeze new users into already heavily occupied spectrum. Moreover, government-imposed receiver specifications may lead to a "false sense of security" regarding the number of uses any spectrum band can accommodate, thus exacerbating interference problems.[10] In fact, as commenters point out, underlays would actually increase the potential for interference which would limit innovation and "deter licensees and the manufacturers who serve them from making the investment necessary to develop and deploy new technologies." Further, attempting to underlay exclusive frequencies would "undermine exclusive use licensees' ability to maximize the use of their licensed spectrum."[11] The complexity of RF network design counsels against adopting receiver specifications as a "sideways" method of introducing a form of spectrum management based upon interference temperature or noise-floor protocols. Even those commenters who support an interference temperature-based model admit that more study is required before such a model could be used in the real world. [12]

The Commission must note that "CMRS industry participants have developed enormous resources to acquiring adequate spectrum and developing spectrum-efficient equipment."[13] This investment would erode if the Commission established standards

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9 *See* Cingular Comments at 11-13.

10 *See* Ericsson Comments at 6.

11 *See* AT&T Comments at 19.

12 *See, e.g.*, Motorola Comments at 4; Comments of Microsoft Corporation at n. 14.

13 *See* CTIA Comments at 3-4.

that would limit the licensee's use of the frequency and/or cause its equipment to be immediately outdated. To exacerbate matters, it is unclear who would bear the responsibility to deploy the improved receivers — would the burden be on the existing licensees, or on the unlicensed users?[14] If the increased costs are borne by the licensee, these costs will most likely translate into higher costs for the consumer.

In short, implementing receiver specifications as a pretext for adopting a new spectrum management model will likely cause more harmful interference to consumers of spectrum-based services than it cures. Any regulatory proposal that might actually decrease service quality and reliability, while discouraging innovation and increasing costs that must be passed onto customers, is contrary to the public interest and should be avoided.

Conclusion

For the reasons stated herein as well as in their Comments, and in the comments of the other parties to this proceeding as cited herein, the Joint Commenters respectfully submit that interference immunity specifications are unnecessary for CMRS receivers and should not be adopted.

Respectfully submitted,

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[14] *See* Motorola Comments at 5.

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August 18, 2003